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inate; that the rise from minimum is more rapid than the fall from maximum; that an unusual proportion of red stars are variable, and that nearly all variables of long period are red; that the redness increases with the length of the period; that the spectra of nearly all are marked with broad and strong absorption bands; that in a few bright hydrogen lines and carbon flutings appear in the spectrum as the star approaches maximum.

From these facts it is highly probable that the variations in brightness are produced by luminous changes in the stellar atmospheres, and that these changes are brought about in some way by the influence of planetary, meteoric or cometary attendants.

But the time has not yet come to formulate with certainty the causes of variability of stars in this class. A large amount of work, both of a spectroscopic and telescopic nature, must first be done in order to learn more of the physical constitution of these stars, and of the peculiar laws under which their variations take place.

My observations referred to in this paper were made with the 15.5-inch equatorial telescope of the Washburn Observatory, at Madison, Wisconsin, between November, 1889, and July, 1892.

OBSERVATIONS OF THE OCCULTATIONS OF *MARS* AND *JUPITER*.

1892, SEPTEMBER 3 AND SEPTEMBER 9.

BY PROFESSOR J. M. TAYLOR.

OBSERVATORY OF THE UNIVERSITY OF WASHINGTON,
SEATTLE, WASH., September 13, 1892.

I send you the result of my observations of the occultations of *Mars* and *Jupiter*. I had no means at hand to determine my watch correction, but set it carefully by a regulator keeping Pacific standard time.

SATURDAY, September 3, 1892.

Observation of the Occultation of Mars by the Moon.

Immersion..	First contact..	$9^h\ 27^m\ 15^s$.	P. S. time.
	Mars hidden..	$9^h\ 28^m\ 21^s$.	" "
Emersion...	First sight....	$10^h\ 25^m\ 26^s$.	P. S. time.
	Full view.....	$10^h\ 26^m\ 21^s$.	" "

FRIDAY, September 9, 1892.

Occultation of Jupiter by the Moon.

Watch keeping Pacific standard time. No allowance made for watch correction.

Three satellites precede the planet.

First satellite hidden . . $5^h\ 20^m$ A. M.
Second " " . . $5^h\ 30^m$ "
Third " " . . $5^h\ 31^m\ 45^s$ "
Immersion . . { First contact of *Jupiter* and Moon . . $5^h\ 35^m$.
Jupiter hidden . . . . $5^h\ 36^m\ 45^s$.

While the planet was behind the moon I was called away and left the instrument in charge of a student, who did not succeed in making a record of the time of emersion.

The latitude of the Observatory is 47° 35′ 54″ North. The longitude is 122° 20′ 0″ West.

A LARGE SOUTHERN TELESCOPE.

By Prof. E. C. PICKERING,
Director of HARVARD COLLEGE OBSERVATORY.

The wide interest in astronomical research is well illustrated by the frequent gifts of large telescopes to astronomical observatories by wealthy donors who are not themselves professional students of astronomy. The number of these gifts is continually increasing, and in no department of science has greater liberality been displayed. Unfortunately, the wisdom shown in the selection of good locations for the telescopes has not equaled the generosity with which they have been given. Political or personal reasons, rather than the most favorable atmospheric conditions, have in almost all cases determined the site. These telescopes have been erected near the capitals of countries or near large universities, instead of in places where the meteorological conditions would permit the best results to be obtained. The very conditions of climate which render a country or city great are often those which are unfavorable to astronomical work. The climate of western Europe and of the eastern portion of the United States is not suited to good astronomical work, and yet these are the very